



Identifier: LANL-ER-QP-6.9	Revision: 0	Effective Date: 09/09/02	 <p>ENVIRONMENTAL RESTORATION PROJECT</p> <p>A Department of Energy Environmental Cleanup Program</p>
ER Document Catalog Number: ER2002-0354			
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<p>Environmental Restoration Project Quality Procedure</p> <p>for:</p> <h1>Preparation of Specifications</h1>			
 <p>Los Alamos NATIONAL LABORATORY</p> <p>Los Alamos NM 87545</p>		<p>Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by the University of California for the United States Department of Energy under contract W-7405-ENG-36.</p>	

Revision Log

<i>Revision No.</i>	<i>Effective Date</i>	<i>Prepared By</i>	<i>Description of Changes</i>	<i>Affected Pages</i>
R0	09/09/02	Andrew E. Gallegos	New Procedure	All

Preparation of Specifications

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Preparation of Specifications

1.0 PURPOSE

This quality procedure (QP) states the responsibilities and describes the process for preparing specifications for the Environmental Restoration (ER) Project.

2.0 SCOPE

- 2.1 All **ER Project personnel** shall implement this mandatory QP when preparing specifications for the ER Project.
- 2.2 **Subcontractors** performing work under the ER Project's quality program shall follow this QP when preparing specifications for the ER Project.

OR

- 2.3 **Subcontractors** may use the subcontractor's procedure as long as the substitute meets the requirements prescribed by the ER Project Quality Management Plan, and the Environmental Restoration (ER) Project's Quality Program Project Leader (QPPL) approves the procedure before starting designated activities.

3.0 TRAINING

- 3.1 **ER Project personnel** shall train to and use the current version of this QP; contact the author if the QP text is unclear.
- 3.2 **ER Project personnel** shall document training in accordance with LANL-ER-QP-2.2, Personnel Orientation and Training, entered in the ER Project Training Database located at <http://erinternal.lanl.gov/Training/login.asp>.
- 3.3 The **supervisor** shall monitor the proper implementation of this procedure and shall ensure that relevant team members complete all applicable training assignments in accordance with LANL-ER-QP-2.2, Personnel Orientation and Training.

4.0 DEFINITIONS

- 4.1 *Architect/Engineering (A/E)*—A firm or organization selected to perform engineering services.
- 4.2 *Design Agent*—The organization assigned the responsibility for formulation of the design in accordance with established plans and procedures. Normally this is an Architect/Engineer or a Construction Contractor.

- 4.3 *Subcontractor*—A private company performing construction work or services under the ER Project.
- 4.4 *Team Leader*—The individual who has been assigned responsibility for the coordination and direction of the design document preparation, typically the University Technical Representative.
- 4.5 *Vendor/Supplier*—The party furnishing material or services for the ER Project.
- 4.6 *Work Breakdown Structure (WBS)*—A deliverable-oriented grouping of project elements, which organizes and defines the total scope of the project, and can be effectively executed by groups of individuals or vendors/contractors. Each descending level represents an increasingly detailed definition of a project component.

5.0 RESPONSIBLE PERSONNEL

The following personnel are responsible for activities identified in this procedure.

- Author (Construction Specification Author)
- ER Project Personnel
- Quality Program Project Leader (QPPL)
- Subcontractor
- Supervisor
- Team Leader

6.0 REFERENCES

To implement properly this QP, ER Project personnel should become familiar with the contents of the following documents, located at

http://erinternal.lanl.gov/home_links/Library_proc.shtml:

- ER Project Quality Management Plan
- LANL-ER-QP-2.2, Personnel Orientation and Training
- LANL-ER-QP-3.2, Lessons Learned
- LANL-ER-QP-4.4, Record Transmittal to the Records Processing Facility
- LANL-ER-QP-4.5, Document Control
- LANL-ER-QP-4.9, Document Development and Transmittal Process: Peer Review Required
- LANL-ER-QP-6.3, Design Review

- LANL-LIR-220-03-01, Facility Engineering Manual, located at [FWO-FE Manual Set Index Page \(external\)](#)
- LANL Construction Specifications Manual (LCSM), No. OST220-03-01-CS, located at [FWO-FE Manual Set Index Page \(external\)](#).

7.0 PROCEDURE

7.1 Use General Specification Format

- 7.1.1 The **specification author** shall prepare construction specifications in accordance with the LANL Construction Specifications Manual (LCSM), OST220-03-01-CS, located at [FWO-FE Manual Set Index Page \(external\)](#).
- 7.1.2 The **specification author** shall use LANL Master Construction Specifications to develop ER Project specifications, if available for specified work.
- 7.1.3 The **specification author** shall conform to the recommendations of the Construction Specification Institute's (CSI) Manual of Practice except to the extent the LCSM departs from those recommendations.
- 7.1.4 When assembling a specification package, the **specification author** shall include applicable specifications from all divisions, especially Division 1, General Requirements.
- 7.1.5 The construction-specification **author** shall issue and organize construction specifications in conformity with the CSI division numbering system as follows:

<u>Division</u>	<u>Description</u>
1	General Requirements
2	Site work
3	Concrete
4	Masonry
5	Metals
6	Wood and Plastics
7	Thermal and Moisture Protection
8	Doors and Windows
9	Finishes
10	Specialties
11	Equipment

12	Furnishings
13	Special Construction
14	Conveying Systems
15	Mechanical
16	Electrical

7.2 Use Specification Numbering

7.2.1 The **specification author** shall number specifications in accordance with the LCSM and CSI guidelines.

7.2.2 The **specification author** shall ensure that specification numbers are consistent with LANL Standard Specifications.

7.3 Prepare Specification

The **specification author** shall prepare specifications as follows:

7.3.1 Use LANL Master Construction Specifications, if available.

7.3.2 When editing LANL Master Construction Specifications to suit a specific project, add job-specific requirements and delete only those portions that in no way apply to the activity (e.g., a component that does not apply).

Note: To seek a variance from applicable requirements, contact the LANL Engineering Manual, located at [FWO-FE Manual Set Index Page \(external\)](#) discipline Point of Contact (POC).

7.3.3 Consecutively number pages of specifications grouped within a section, prefixed with the section number (e.g., 11300-1, 11300-2, 11300-3... 11300-etc.).

7.3.4 Include the Project I.D. Number, revision number, and date of issue on each page.

7.3.5 Write and edit specifications in accordance with the LCSM.

7.3.6 Provide detailed information regarding equipment, material, and operation within the scope of the contract to serve as a basis for competitive bidding and to provide instructions for execution of the work.

7.3.7 List all materials and equipment/items designated as furnished to the subcontractor as Government furnished equipment and appropriate data sheets and bills of material.

7.3.8 Provide data that is sufficient to establish the basis for bids including, but not limited to, description, weight and size, quantity, date and

place of delivery, loading and unloading responsibility, inspection permits, and installation instruction and requirements.

- 7.3.9 Crosscheck drawings and specifications to ensure that the work package is in a biddable form and no conflicting information exists.
- 7.3.10 Avoid determining which construction trades or crafts will accomplish specific items of work in technical sections.
- 7.3.11 Ensure technical sections specify in detail the requirements and schedule for review and approval of submittals and correspond to the Submittals List required in Section 01300.
- 7.3.12 Specify in detail all sampling and testing that is the responsibility of the subcontractor, including how sampling and testing is performed, duration of test where applicable, acceptance criteria (including detection limits), and by whom tests shall be performed, supervised, or witnessed.
- 7.3.13 Where recognized sampling and testing procedures are not available, prepare and incorporate these procedures into the technical specifications or specify that the subcontractor develops or provides sampling and testing procedures for ER approval prior to proceeding.

7.4 Revise Specification

ER Project Personnel requiring a revision of an approved specification shall implement the following:

- 7.4.1 Revise specifications only by first obtaining approval from the responsible TL, and the QPPL.
- 7.4.2 Ensure revisions to specifications receive the same levels of approval as the original document before issued for construction.
- 7.4.3 Indicate all revisions made on specifications, after Rev. 0, by a vertical marker in the right margin to distinguish between revised and existing text; before issuing the next revision, remove the previous revision indicators.
- 7.4.4 Mark superseded copies to indicate that they are not current and not in effect; retain superseded specifications as records.
- 7.4.5 The **TL** shall ensure copies of all specifications are submitted to the RPF (See Section 9.0).

7.5 Review, Approve, and Control Specifications

The **specification author** shall implement the following:

- 7.5.1 Review and approve all specifications in accordance with LANL-ER-QP-6.3, Design Review.

- 7.5.2 Designate each page of approved specifications "Issued for Construction."
- 7.5.3 Control specifications in accordance with LANL-ER-QP-4.5, Document Control.
- 7.6 Issue Specifications
 - The **specification author** shall implement the following:
 - 7.6.1 Designate construction issues of specifications by successive numbers using "0" as the first issue.
 - 7.6.2 After approval, issue specifications as controlled copies. (See LANL-ER-QP-4.5, Document Control).

8.0 LESSONS LEARNED

- 8.1 Before performing work, **ER Project personnel** should go to the U.S. Department of Energy, lessons-learned web page, located at <http://www.tis.eh.doe.gov/II/II.html> and/or the Los Alamos National Laboratory, lessons-learned web page, located at http://www.lanl.gov/projects/lessons_learned/, and search for applicable lessons.
- 8.2 During the performance of work, **ER Project personnel** shall identify, document, and submit lessons learned, as appropriate in accordance with LANL-ER-QP-3.2, Lessons Learned, located at http://erinternal.lanl.gov/home_links/Library_proc.shtml.

9.0 RECORDS

The **TL** shall submit the following records to the Records Processing Facility, in accordance with LANL-ER-QP-4.4, Record Transmittal to the Records Processing Facility:

- 9.1 Specifications issued for construction.
- 9.2 Completed ER Document Signature Form.

10.0 ATTACHMENTS

Attachment A: CSI Specification Format (1 page)

Attachment B: Preparation of Specifications Process Flow Diagram (2 pages)

[Using a token card, click here to record "self-study" training to this procedure.](#)

If you do not possess a token card or encounter problems, contact the RRES-ECR training specialist.

CSI Specification Format

Part 1 – General:

Include in this section a statement(s) that addresses and/or identifies the following:

- References (e.g., ASTM Standards, federal, state and local regulations and/or laws, manufacture and construction guidance etc.).
- Submittals (e.g., schedules, test records, certificate of conformance, training records, permits, analytical data etc.).
- Requirements (e.g., material test parameters,).
- Delivery, Storage, and Handling.
- Quality Assurance requirements (e.g., quality assurance program, vendor/supplier qualification, continuous improvement, lessons learned etc.).
- Price Anderson Amendments Act and Integrated Safety Management requirements.

Part 2 – Products

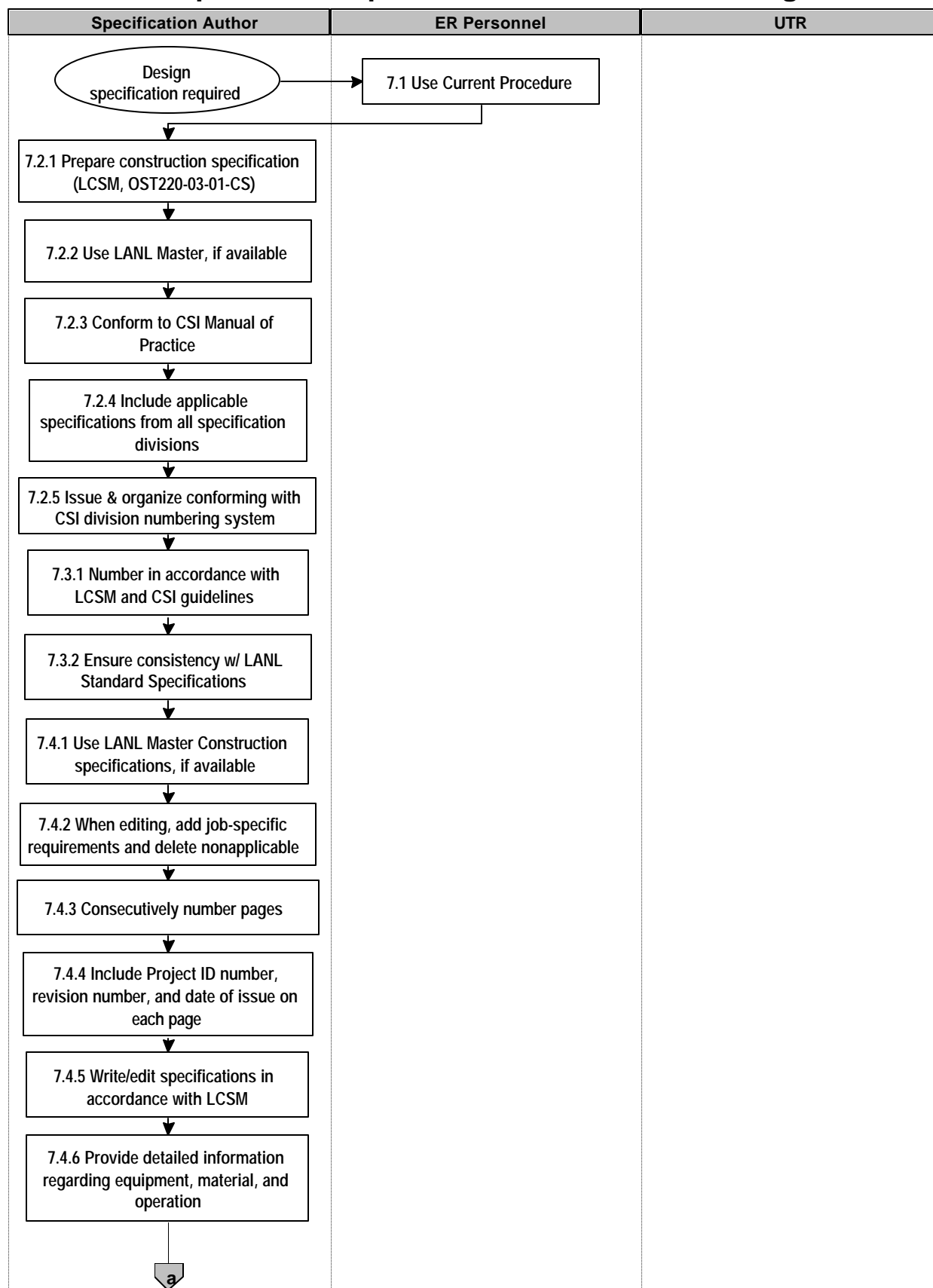
- Include in this section a statement(s) that addresses and/or identifies a description of materials, equipment, and fixtures and manufacturing process used in the development and production of products.
- Type and quantity of materials.

Part 3 – Execution

Included in this section a statement(s) that address and/or identify the following:

- Step by step instructions for the preparation, implementation, and completion of the work.
- Installation, application, and performance of the work.
- Frequency of testing.
- Field quality control requirements (e.g., inspection and/or test hold and witness points, identification and control of nonconforming material and tests, configuration management, etc.).

Preparation of Specifications Process Flow Diagram



Preparation of Specifications Process Flow Diagram (Cont.)

